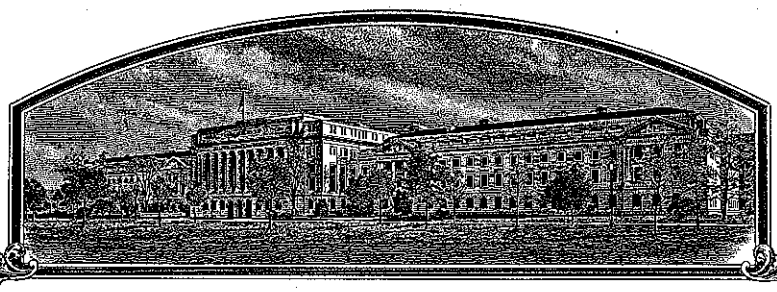
No. 200400257



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Seminis Vegetable Seeds, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR [illegible]PORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE [illegible] PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE [illegible] OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PR[illegible]BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CARROT

'YK714900'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this sixth day of September, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Seminis Vegetable Seeds, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME

3. VARIETY NAME
YK 714900 SMS 9/3/04

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
2700 Camino del Sol
Oxnard, CA 93030-7967

5. TELEPHONE *(include area code)*
805 647 1572

6. FAX *(include area code)*
805 918 2545

FOR OFFICIAL USE ONLY

PVPO NUMBER
2004 00257

FILING DATE
June 28, 2004

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
California

9. DATE OF INCORPORATION
04-Jun-1962

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*

Sharen Chaffin
Seminis Vegetable Seeds, Inc.
37437 State Hwy 16
Woodland CA 95616

Marcel Bruins
Seminis Vegetable Seeds, Inc.
Nude 54D
6702 DN Wageningen
The Netherlands
mbruins@svseeds.nl
Ph: 31 317 450218 Fax: 31 317 450217

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 3652.00
DATE 6/28/04

CERTIFICATION FEE:
$ 768.00
DATE 7/18/2006

11. TELEPHONE *(Include area code)*
530 669 6172

12. FAX *(Include area code)*
530 666 4426

13. E-MAIL
sharen.chaffin@seminis.com

14. CROP KIND *(Common Name)*
Carrot

15. GENUS AND SPECIES NAME OF CROP
Daucus carota

16. FAMILY NAME *(Botanical)*
Umbelliferae

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☑ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

a. ☑ Exhibit A. Origin and Breeding History of the Variety
b. ☑ Exhibit B. Statement of Distinctness
c. ☑ Exhibit C. Objective Description of Variety
d. ☐ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☑ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☑ Filing and Examination Fee ($2,705), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 20 and 21 below)* ☑ NO *(If "no", go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? ☐ YES ☑ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, *etc.* ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☐ YES ☑ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☑ YES ☐ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER	SIGNATURE OF OWNER
Sharen Chaffin	
NAME *(Please print or type)*	NAME *(Please print or type)*
Sharen Chaffin	
CAPACITY OR TITLE: Specialist	CAPACITY OR TITLE
DATE 6-25-04	DATE

INSTRUCTIONS

2004 00257

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,705 ($320 filing fee and $2,385 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvpo/pvp.htm

ITEM

18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

19. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

22. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

23. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

21. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

22. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

23. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

EU: PBR No. 2004/0939, filed 5/19/04

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089. http://www.ams.usda.gov/lsg/seed/ls-sd.htm

S&T-470 (04-01) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (02-99) which is obsolete.

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EXHIBIT A
Origin and Breeding History of YK714900, Yellow Carrot

YK714900 was developed from work based at the Seminis Breeding Station in Payette, Idaho. The reproductive cycle was carried out at Payette, while the vegetative cycle was performed at The Elmore Farms, Inc. property near Brawley, California. Roots are grown at the Southern California location and transported to Idaho for seed production.

This carrot is the result of a backcross system to a maintainer line (B-line). The B-line was developed via a pedigree breeding system crossing a yellow Seminis breeding line (KPS yellow) with a Seminis orange breeding line Kuroda Chantenay carrot (Kinko4 NB). The yellow breeding line arose from a single plant selection of a yellow individual found within the orange population 'Kuroda PS". The orange population is a non-bolting selection within an open pollinated line obtained of Japanese decent. The breeding process was as follows:

Sept. 1991	Planted parentals in Brawley, CA (KPS yellow and Kinko4 NB)
Feb. 1992	Harvested parental roots and crossed in Fertile x Fertile fashion.
Sept. 1992	Planted Fertile x Fertile seed in California
Feb. 1993	Harvested known vigorous F1 roots from the F x F population and selfed
Sept. 1993	Planted F2 population seed in California
Feb. 1994	Selected yellow, Chantenay shaped root segregates with good eating quality in F2 population and made sib-mate increase. **Crossed male sterile line to selected F2 roots. Male sterile was Seminis Kuroda type breeding line '5511op12S'.**[1]
Sept. 1994	Planted F2M population and F1 seed in California
Feb. 1995	Selected the same root form as the F2. Again, increased via sib-mate population. **Also harvested roots within the F1 to backcross and check male sterility.**
Sept. 1995	No work advancement on this line.
Sept. 1996	Planted F2M2 population seed and BC1 seed in California.
Feb. 1997	Again selected for same criteria in F2M2 and **BC1** populations.
Sept. 1997	Planted F2M3 population seed and BC2 seed in California.
Feb. 1998	Again selected for same criteria in F2M3 and **BC2** populations.
Sept. 1998	Planted F2M4 population seed and BC3 seed in California.
Feb. 1999	Again selected for same criteria in F2M4 and **BC3** populations.
Sept. 1999	Planted F2M5 population seed and BC4 seed in California.
Feb. 2000	Again selected for same criteria in F2M5 and **BC4** populations.
Sept. 2000	Planted F2M6 population seed and BC5 seed in California.
Feb. 2001	Again selected for same criteria in F2M6 and **BC5** populations. Began crossing new BC5 population, 'YK714900', to yellow pollinators.
Sept. 2001	Planted F2M7 population seed and BC6 seed in California.
Feb. 2002	**Evaluated new hybrids using 'YK714900'.**
Sept. 2002	Replanted selected hybrid '71 0005' and advanced 'YK 71 4900A to Foundation Seed for seed increase.

[1] '5511op12S' Background: In 1981, open flowers of Shih-Kuroda OP were allowed to open-pollinate with any available pollen at that time. The seed was harvested and taken to the F3 generation, selecting for a Kuroda/Chantenay shape. In 1984, the new 5511op12 line was crossed with an unidentified male sterile. This new F1 was backcrossed in subsequent generations to 5511op12M (the line was found to be a maintainer, thus the addition of the M designation) and resulted in the development of the isogenic male sterile line '5511op12S'.

Feb. 2003 Decision to advance and protect.

***Bold face portions refer to the development process of 'YK714900, specifically.**

Repeated selection for a Chantenay root shape, reduced green shoulder, uniform yellow color, and above all, excellent eating quality were the main objectives during the development of the maintainer carrot. An extreme level of uniformity, after six sib-mate generations following the F2 population was achieved. This carrot demonstrates 100% fixation for yellow color and is uniformly of Chantenay shape. Eating quality is consistent from one root to the next. The 'YK714900' has 6 generations of backcrossing, making it nearly isogenic (above 99%) to the maintainer line. Very little variability within the line is observed, other than that expressed by environmental influence within any field condition.

Observations in 2002 and 2003 confirm YK714900 (both the maintainer line and the male sterile line) is uniform and stable within commercially acceptable limits. As is true with other carrots, a small percentage of variants can occur within commercially acceptable limits for almost any characteristic during the course of repeated multiplication. However, no variants were observed during the two years in which YK714900 was observed for uniformity and stability.

EXHIBIT B
Novelty Statement Concerning YK714900, Yellow Carrot

YK714900 is the result of a backcross system to a maintainer line (B-line). The B-line was developed via a pedigree breeding system crossing a yellow Seminis breeding line (KPS yellow) with a Seminis orange breeding line Kuroda Chantenay carrot (Kinko4 NB). The original yellow line (KPS yellow) is the result of a single plant selection found within an orange Seminis population called 'Kuroda PS'.

To our knowledge, the result is a carrot with a combination of several unique qualities. These qualities are, but may not be limited to:

- A Chantenay style carrot with exceptional eating quality. The texture is extremely crisp and succulent. The carrot exhibits extremely low levels of Caryophyllene, which appears to be an important component in the taste perception of harsh flavor.

- The yellow color, though a result of low carotene content (as evidenced in the attached data) is quite distinct from most standard orange carrots.

Please see the attached data that demonstrates some of the above statements, specifically 1) the low Caryophyllene content, which relates to non-harsh flavor and 2) low alpha and beta carotene content, which relate to the yellow color.

Also, the attached picture shows the uniqueness of this carrot variety's shape and appearance. The only resemblance to 'Yellowstone' or 'Juane de Doubs' to 'YK714900' is that they are yellow. But even the yellow color is quite different, with 'YK714900' yellow being lighter in color.

Based on overall morphology, YK714900 is most similar to 'Sweet Sunshine' in most ways. However, YK714900 differs from 'Sweet Sunshine' in one significant way: YK714900 is a male sterile, whereas 'Sweet Sunshine' has perfect flowers.

Hybrid	Color	Lutein	Lycopene	Alpha-Carotene	Beta-Carotene	IU Vit A/g
YK714900	Yellow	0.54	0.00	0.11	0.28	0.56
710001	Yellow	1.54	0.00	0.14	0.56	1.05
710002	Yellow	2.48	0.00	0.11	0.75	1.34
Yellowstone	Yellow	3.43	0.00	0.10	2.96	5.02
Chantenay Red Cored	Orange	1.45	0.00	11.78	41.17	78.44
Crispy	Orange	0.81	0.00	15.87	35.39	72.21
Cascade	Orange	1.50	0.00	16.16	62.47	117.59
Carson	Orange	2.18	0.00	17.45	66.35	125.12

Hybrid	Alpha-Pinene	Beta-Pinene	Myrcene	Alpha-Phellandrene	Alpha-Terpinene	Limonene	Gamma-Terpinene	Terpinolene	Terpineol	Bornyl Acetate	Caryo-phyllene	Gamma-Bis Abolene	Total
YK714900	0.12	0.28	0.07	0.03	0.03	0.14	0.54	1.87	1.90	0.46	0.36	17.14	21.02
710001	2.97	0.72	0.29	0.03	0.02	0.26	1.71	3.28	1.25	0.97	3.08	33.37	46.70
710002	3.61	0.59	0.62	0.06	0.12	0.46	1.61	6.73	1.58	0.46	6.71	45.20	66.17
Yellowstone	0.35	1.73	0.70	0.17	0.06	0.98	1.59	17.57	0.22	0.14	2.12	24.32	49.73
Chantenay Red Cored	0.27	1.60	0.30	0.08	0.04	0.49	2.09	7.94	0.16	0.16	10.56	11.37	34.89
Crispy	0.32	0.52	0.34	0.13	0.03	0.78	0.76	14.31	0.23	3.06	4.34	6.28	30.88
Cascade	0.10	0.65	0.18	0.03	0.05	0.25	1.07	3.68	0.30	2.76	8.04	28.32	45.13
Carson	0.15	0.28	0.24	0.07	0.03	0.41	1.36	6.84	0.05	0.24	9.33	26.76	45.72

*All data collected from Elmore Farms, Inc. at Brawley, California. February 2003.

Reproduce Locally

SD-470-
(2-2003)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE, SCIENCE DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

Exhibit C
(Carrot)

OBJECTIVE DESCRIPTION OF VARIETY

CARROT (*Daucus carota*)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Seminis Vegetable Seeds, Inc.	YK 71-4900A	YK714900

SMS 11/5/04

ADDRESS (Street & No., or R.F.D. No., City, State, & Zip Code)
2700 Camino del Sol
Oxnard, CA 93030-7967

PVPO NUMBER
2004 00257

On the left side of the form, enter in each space the appropriate numbers that describes the characteristics typical of the application variety. On the right side, enter the same information on the most similar comparison variety. When the number of significant digits is fewer than the number of spaces, place a zero in the first space or spaces. All characters need not be described; however, completeness should be striven for in order to establish the most adequate variety identification.

	Comparison Variety/Inbred/Line Chantenay Red Cored
1. TYPE 4 1 = Amsterdam 2 = Flakee 3 = Berlicum 4 = Chantenay 5 = Danvers 6 = Imperator 7 = Nantes 8 = Other (Specify) _____	4 Type Chantenay
2. REGION OF BEST ADAPTATION IN U.S.A. 7 1 = Northeast 2 = Northwest 3 = Southeast 4 = Southwest 5 = North central 6 = South central 7 = Most Regions	7 Region of Adaptation
3. MARKET MATURITY 120 No. Days from Seeding to Harvest	170 days to Market Maturity
4. PLANT TOP (At Harvest Stage) 2 Habit: 1 = Erect 2 = Semi-erect 3 = Prostrate ~~05~~ 60 cm ~~Height from Shoulder to Top of Crown~~ Plant Top Height 10 mm Neck Diameter 1 Top Attachment: 1 = Single 2 = Multiple	1 Habit 65 cm Plant Top Height 18 mm Neck Diameter ~~35~~ ~~cm Plant Top Diameter~~ 1 Top Attachment
5. LEAF (At Harvest Stage) 2 Name of Color Chart: 1=Munsell Book of Color 2=RHS Colour Chart 3=Other (specify) _____ 2 Blade Color: 1 = Light Green 2 = Medium Green 3 = Dark Green 4 = Other (specify) _____ Color Chart Notation 135C 2 Blade Divisions: 1 = Fine 2 = Medium 3 = Course 20 cm Blade Length (Without Petiole) 12 cm Petiole Length from Crown to First Pinna 1 Petiole Anthocyanin: 1 = Absent 2 = Present 1 Petiole Pubescence: 1 = Absent 2 = Present	3 Leaf Blade Color Dark Green Color Chart Notation N134C 3 Leaf Blade Divisions 30 cm Leaf Blade Length 20 cm Leaf Petiole Length 1 Petiole Anthocyanin 1 Petiole Pubescence

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Application Variety | Page 1 | Most Similar Variety

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Application Variety | Page 2 | Most Similar Variety

6. ROOT (At Market Maturity)	
20 mm Cortex (Phloem) Thickness (Midpoint X-Section)	20 mm Cortex Thickness
20 mm Core (Xylem) Thickness (Midpoint X-Section)	25 mm Core Thickness
13 cm Carrot Length (Minus Taproot)	16 cm Carrot Length
20 mm Length of Taproot	20 mm Length of Taproot
60 mm Diameter at Shoulder	80 mm Diameter at Shoulder
45 mm Diameter at Midpoint	50 mm Diameter at Midpoint
2 Amount Exposed (Above Ground): 1 = None 2 = 1-10% 3 = 11-20% 4 = 21-30% 5 = 31-40% 6 = >40%	2 Amount Exposed
2 Shape: 1 = Round 2 = Conic 3 = Cylindrical	2 Root Shape
2 Collar: 1 = Sunken 2 = Level 3 = Raised	2 Collar
1 Shoulder: 1 = Rounded 2 = Sloping 3 = Square	2 Shoulder
3 Base: 1 = Pointed 2 = Medium 3 = Blunt	2 Base
1 Surface Smoothness: 1 = Very Smooth 2 = Dimpled or Corrugated	2 Surface Smoothness
1 Number Secondary Root Scars: 1 = None 2 = Few 3 = Many	1 # Secondary Root Scars
1 Appearance of Secondary Root Scars: 1 = Not Prominent 2 = Prominent	1 Appearance of Secondary Roots
2 Halo: 1 = None 2 = Faint 3 = Prominent	2 Halo
2 Zoning: 1 = None 2 = Faint 3 = Prominent	3 Zoning
5 Flavor Harshness: 1=Very Harsh 3=Moderate Harsh 5=Mild Harsh	3 Flavor Harshness
4 Flavor Sweetness: 1=Not Sweet 3=Moderate Sweet 5=Very Sweet	2 Flavor Sweetness

Notes: Halo: Cross-section showing color difference between xylem and phloem.
Zoning: Longitudinal cut showing color difference between xylem and phloem.
Color choices: 1=White, 2=Yellow, 3=Orange, 4=Red, 5=Purple, 6=Green, 7=Salmon, 8=Light, 9=Dark.
Color examples: 0 2 = Yellow; 3 4 = Orange-Red; 9 4 = Dark Red.

COLORS:

2 Name of Color Chart: 1=Munsell Book of Color 2=RHS Colour Chart 3=Other (specify) _____

Above Ground Exterior Color: 06 02 Shoulder (Color Chart Notation Green Yellow 141C)	03 Shoulder (Color Chart Notation Orange 25C)
Above Ground Exterior Color: 06 02 Skin (Color Chart Notation Green Yellow 141C)	03 Skin (Color Chart Notation Orange 25C)
Below Ground Exterior Color: 02 Shoulder (Color Chart Notation Yellow 1G)	03 Shoulder (Color Chart Notation Orange 25B)
Below Ground Exterior Color: 02 Skin (Color Chart Notation Yellow 1G)	03 Skin (Color Chart Notation Orange 25B)
X-Section Interior Color: 82 Xylem (Core) (Color Chart Notation Lt. Yellow 155A)	83 Xylem (Color Chart Notation Lt Orange 24A)
X-Section Interior Color: 82 Phloem (Color Chart Notation Lt. Yellow 4D)	03 Phloem (Color Chart Notation Orange 25C)

7. FLOWER	
01 Flower Color White 155A Color Chart Notation	01 Flower Color White 155A Color Chart Notation
2 Male Fertility: 1=Fertile 2=Male-Sterile 3=Other _____	1 Fertility
2 Anthers: 1=Normal 2=Petaloid 3=Other _____	1 Anthers

Application Variety | Most Similar Variety

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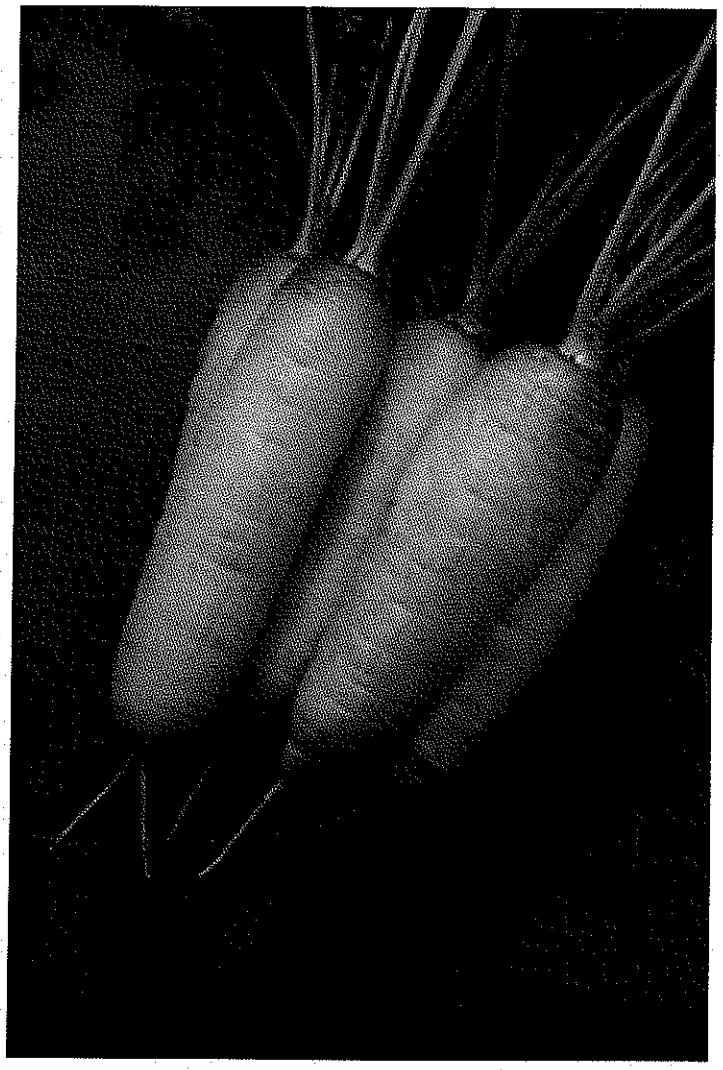
Application Variety	Page 3	Most Similar Variety
8. SEED		
90 cm Height of Seed Stalk		125 cm Height of Seed Stalk
2 Stalk Pubescence: 1 = Absent 2 = Little 3 = Moderate 4 = Heavy		2 Stalk Pubescence
125 mm Diameter of First Order Umbel		160 mm Diameter of First Order Umbel
2 Seed Spines: 1 = Absent 2 = Present		2 Seed Spines
225 mg per 100 Seeds		275 mg per 100 Seeds
8. DISEASE REACTION (1 = Susceptible; 2 = Resistant; give races if known)		
2 Alternaria Blight A. dauci		1 Alternaria Blight
___ Aster Yellows		1 Aster Yellows
1 Cavity Spot Pythium violae		1 Cavity Spot
___ Cercospora Blight		1 Cercospora Blight
___ Motley Dwarf Virus		1 Motley Dwarf Virus
___ Powdery Mildew		1 Powdery Mildew
___ Pythium Root Dieback		1 Pythium Root Dieback
___ Sclerotinia Decay		1 Sclerotinia Decay
1 Other (Specify) Xanthomonas campestris		1 Other ___
9. INSECT REACTION (1 = Susceptible; 2= Resistant; give races if known)		
1 Root Knot Nematode M. hapla, M. incognita		1 Root Knot Nematode
___ Other (Specify) ___		___ Other ___
10. PHYSIOLOGICAL REACTION (1 = Susceptible; 2 = Resistant)		
2 Bolting		2 Bolting
1 Root Splitting		2 Root Splitting

COMMENTS:

YK-71-4900A is extremely unique in texture and eating quality. Extremely juicy and crisp, also relates to susceptibility to root splitting. Pleasing yellow color with green discoloration on the shoulders.

In terms of maturity values, I discussed this with Rob Maxwell, breeder of 'YK714900'. Following are his comments:

> Maturity is a relative characteristic. Most people look at two varieties and decide which one is earlier. If one variety is already listed for a maturity, then the second is given a rating based upon the first.
>
> My maturities reflect reality as to what is done commercially. If anyone pulls a carrot at 60-75 days, they will have a pale orange, spindly root; not even close to mature. Commercially, and our rating, is from days after emergence. The catalogs must go from 60 days after emergence. The home gardener may get excited about seeing something at 60 days, but a commercial grower knows that anything less than 120 days is considered very early.
>
> Maturity also is highly dependent upon season and temperature. For example, a normal growing period in Bakersfield summer is 110 days. The same hybrid grown in Imperial Valley winter is 135 days.
>
> On the Chantenay, you could harvest a commercial root at 130 days in a normal summer growing condition. However, the standard use of Red Cored Chantenay is for processing, and the typical growing season is planting in April and harvest in October. Usually around 180 days for full potential.



YK714900: Unique shape and appearance

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Seminis Vegetable Seeds, Inc.		YK 714900

JMS 11/5/04

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(Include area code)*	6. FAX *(Include area code)*
2700 Camino del Sol Oxnard, CA 93030-7967	805 647 1572	805 918 2545

7. PVPO NUMBER

2004 00257

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain** ☑ YES ☐

9. Is the applicant (individual or company) a U.S. National or a U.S. based company? **If no, give name of country** ☑ YES ☐ NO

10. Is the applicant the original owner? ☑ YES ☐ NO **If no, please answer <u>one</u> of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☐ NO **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☐ NO **If no, give name of country**

11. Additional explanation on ownership *(If needed, use the reverse for extra space)*:

The variety named in this application was developed by the Seminis Vegetable Seeds, Inc., employee (breeder) named below. By agreement between employee and Seminis Vegetable Seeds, Inc., all rights to any invention, discovery, or development made by an employee are assigned to the Company. No rights to such invention, discovery, or development are retained by the employee.

Employee (Breeder): Rob Maxwell Site Location: Payette, Idaho

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.